REMARKS

Claims 1-41 were present in the application as filed. In response to a restriction requirement mailed April 17, 2003, Applicant provisionally elected claims 1-11, 17-18, 29, 33, 34, 38 and 39 with traverse with respect to claims 12-16, 19-28, 30-32, 35-37 and 40-41. Subsequently, claims 1-41 were pending in the application, with claims 30-32 withdrawn from consideration. Claims 3, and 29-32 and 34 are canceled above. Claims 1, 2, 4-28, 33 and 35-41, therefore, are pending in the application. Reconsideration of the application in view of the above amendments and following remarks is respectfully requested.

Applicant acknowledges the allowability of claims 17-20 and 23-28.

Rejections under 35 U.S.C.§112, second paragraph

Claim 10 is rejected under 35 U.S.C. §112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, because it recites the Trademark pBluescript ™.

Accordingly, claim 10 is amended herein to more particularly point out the subject matter which is encompassed by the claim.

Rejections under 35 U.S.C.§102

Claims 1-16, 21-22 and 33-39 are rejected under 35 U.S.C. §102(b) as being anticipated by Fussenegger et al. (Biotech. And Bioengineer. 57:1-10, 1998). The Office Action states that Fussenegger teaches the construction of a set of 6 plasmids, called pTRIDENT which comprise, among other things, polylinker sites, each of which contains a number of unique restriction sites.

Additionally, the Office Action suggests that it would be possible to produce a fragment of a specific length upon digestion of the plasmid based on distances between the various sites.

What is novel with respect to the set of plasmids of the present invention is its versatility as a tool to monitor a large number of different combinations of restriction endonucleases. The set of plasmids of the present invention assures that there is at least one plasmid in a set in which numerous enzymes are represented, which is informative for any given pair of restriction enzymes. This is achieved by distributing the sites so that for any two restriction enzymes, their respective sites will be in separate polylinkers on at least one of the plasmids of the set (see for example, Table 1 on page 17 of the specification, a set of two plasmids which can be used to monitor 478 of the 484 possible combinations of 22 frequently used enzymes.) Additionally, the polylinkers are separated by a restriction-free spacer segment of a minimum size, whereby digestion of that plasmid of the set with the two restriction endonucleases will necessarily result in two fragments being sufficiently different in size from the intact plasmid so as to be readily distinguishable from the intact plasmid.

An important feature of the plasmids of the present inventions, therefore, is that restriction sites for any two endonucleases be situated on at least one of the plasmids of a set, sufficiently distant from each other to ensure that, following digestion of the plasmid with those two enzymes, the fragments obtained are readily distinguishable from the intact plasmid. This enables any linear plasmid resulting from incomplete digestion to be easily detected.

Accordingly, independent claim 1 is amended herein, to recite a set of plasmids useful for monitoring the efficiency of a restriction endonuclease digestion, wherein each of the plasmids of the set comprises (a) at least one spacer segment comprising a nucleic acid sequence that is restriction site-free; and (b) at least two polylinker regions, wherein each of the polylinker regions contains a plurality of unique restriction sites which are present on each of the plasmids

of the set and wherein the restriction sites are distributed so that for any two restriction enzymes whose sites are represented on the plasmids, the two sites will be in separate polylinkers on at least one of the plasmids of the set. Digestion of that plasmid of the set with the two restriction endonucleases will necessarily result in two fragments, the fragments being sufficiently different in size from the intact plasmid so as to be readily distinguishable from said plasmid.

In the pTRIDENT vectors taught by Fussenegger et al., not every site is unique; for example, the sites for Xho I, Xba I and Sal I appear (at least) twice on each of the vectors (see Figure 1). Thus, for two enzymes, one of which is Xho I, Xba I or Sal I, the result would be more that one fragment. More importantly, there is only minor variation, in some cases, none at all, in the polylinkers of the pTrident vectors. With the exception of two additional sites on pTRIDENT 4, pTRIDENT 2 and pTRIDENT 4, for example, are identical. Additionally, the third polylinker (counting clockwise from the top), is identical in each of the four vectors. Thus, for a pair of enzymes whose sites are both within that polylinker, or where both selected enzymes are within any of the other polylinkers in each of the vectors, there is no one vector which would result in two fragments being sufficiently different in size from the intact plasmid so as to be readily distinguishable from said plasmid and therefore, informative of complete digestion by those two enzymes. The result is a lack of versatility in monitoring all of the possible combinations of two enzymes when compared to a plasmid set with site distribution as described herein.

Since Fussenegger et al. neither teaches nor fairly suggests a set of plasmids having all the features recited in claim 1 of the present invention, the cited reference cannot anticipate the claimed invention. Withdrawal of the rejection under 35 U.S.C. §102 is respectfully requested.

Claims 1-11, 29 and 33-34, 38 and 39 are rejected under 35 U.S.C. §102(b) as being anticipated by Tsang et al. (Biotechniques 22:68, 1997). Tsang teaches the construction of pRSC, an expression vector having the pUC19 backbone, and containing two independent multiple cloning sites (i.e., polylinkers) containing seven unique restriction sites. The teaching of Tsang et al. discloses a single plasmid and, therefore, lacks several features of the instant claims, as amended and discussed above. Withdrawal of the rejection is respectfully requested.

In as much as neither of the cited references anticipates a set of plasmids, claimed above, the kit claims (claims 33 and 35-39) containing the set of plasmids of the present invention are believed allowable for the same reasons as the claims to the set of plasmids.

With regard to the rejection of claims 21 and 22, the plasmids of the present invention necessarily are constructed according to basic cloning techniques known to those of skill in the art. The orientation of the restriction sites along the plasmid, however, is determined in accordance with the novel method of the present invention. It is unclear to Applicant what the basis for rejection of the product by process claim is since the base claim (20) to the process is allowable.

For the foregoing reasons, the claims are believed in condition for allowance and such action is respectfully requested. The dependent claims are believed allowable for the same reasons as the independent claims from which they ultimately depend, as well as for their additional limitations. Should the Examiner require clarification of any of the above, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,

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